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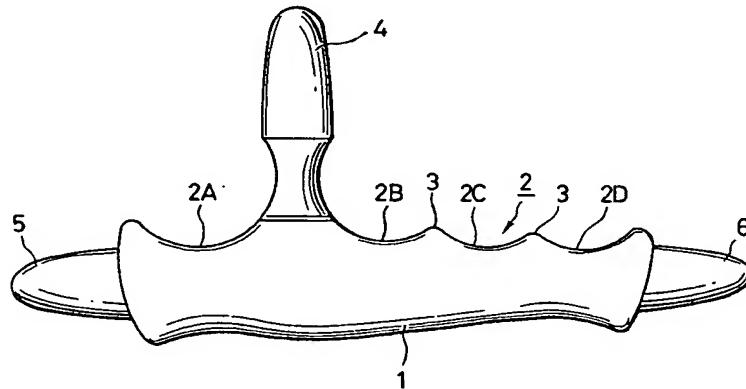
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### ㉒ Hand-held device for self defence.

㉓ A gripping type self-defending tool comprising a grip main body of a shape suitable to gripping by one hand and a protrusion markedly protruding from the grip main body, which is used for striking or thrusting an opponent by gripping a portion of the grip main body, exposing the protrusion in front of a knuckle from between the forefinger and the middle finger. Both ends of the gripping portion are positioned on the right and left of the knuckle, and used for striking or thrusting the opponent by swinging the knuckle right- and left-ward. The protrusion can be

folded into or detached from the grip main body. It is also possible to incorporate a tear gas reservoir into the grip main body to serve the gripping type self-defending tool also as a weapon capable of injecting a stimulating fluid such as a tear gas, incorporate an electric cell into the gap main body and disposing an electric lamp to the protrusion, thereby serving the gripping type self-defending tool also as a flashlight and, further, attach a ring to one end of the grip main body, thereby serving the gripping type self-defending tool also as a key holder.

FIG. 1



## BACKGROUND OF THE INVENTION

## Field of the Invention

The present invention concerns a gripping type self-defending tool which is small in size and convenient to carry about for enabling even a woman, an old man or like other feeble person to defend one self against a ruffian.

## Description of the Prior Art

If a feeble person such as a woman or an old man is attacked by a ruffian, for example, in a park or in a dark place, she (or he) often suffers from damages being incapable of taking any effective counterattack. It may be considered for such a feeble person to always possess a self-defending tool against such a case. As an existent self-defending tool, there has been known, for example, a police baton carried by a policeman or guardsman has including a simply straight club and, in addition, a so-called police baton with crosshandle. The latter has a crosshandle branched in perpendicular from the baton main body at a position displaced longitudinally from the center to one end of the baton main body. A user of the police baton grips the crosshandle by one hand with the little finger being positioned on the side near the baton main body and strikes or thrusts an opponent, for example, by rotating the baton main body around the axis of the crosshandle, suddenly stopping the rotation, or projecting the baton main body along its axial direction. If the user gets accustomed to such maneuvers, the police baton with crosshandle can be used in various way such as quick motion, high speed rotation, sudden starting or stopping, or jabbing from out of the opponent's view which is difficult to be foreseen and, accordingly, it is considered more effective than a simply straight baton.

However, it needs a highly skilled technique to use the police baton in such a way and it is generally difficult. Further, the police baton can not be carried about by putting it into a handbag or pocket and, accordingly, it is not suitable to always being carried about by persons in general.

## OBJECT OF THE INVENTION

The present invention has been achieved taking notice on such a problem in the prior art and an object thereof is to provide a self-defending tool, which can be used by any one with no particular skills for the handling as in the case of the police baton, which is small in size and convenient to carry about and which, in particular, can exert a

powerful impact on an opponent even when the defending tool is used by a woman, an old man or like other feeble person.

## 5 SUMMARY OF THE INVENTION

The foregoing object of the present invention can be attained by a gripping type self-defending tool comprising a grip main body of a length suitable to gripping by one hand and a protrusion markedly protruding from the grip main body.

10 Since the self-defending tool of the present invention has such a size as can be gripped within the palm of a hand, it can be always carried about being put into a handbag or pocket. Upon emergency, a user can grip the grip main body in a palm and give an opponent a surprise attack such as "enforcing", "thrusting", "swinging up or down", "striking" or the like by a protrusion of the grip main body that protrudes in front of or on the right and left of a knuckle, thereby exerting the opponent a powerful impact.

## 25 BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

30 These and other objects, as well as advantageous features of the present invention will become apparent by reading the following descriptions for the preferred embodiments according to the present invention with reference to the accompanying drawings, wherein

35 Fig. 1 is a side elevational view of a first embodiment according to the present invention;

Fig. 2 is a plan view thereof;

Fig. 3 is a side elevational view partially in cross section for a portion of a second embodiment according to the present invention;

Fig. 4 is a side elevational view of a third embodiment according to the present invention;

Fig. 5 is a side elevational view for a modification of the third embodiment;

Fig. 6 is a side elevational view for a main body of a fourth embodiment according to the present invention;

Fig. 7 is a side elevational view for a grip member of the main body shown in Fig. 6;

Fig. 8 is a rear elevational view illustrating a mode of attaching the grip to the main body;

Fig. 9 is a side elevational view for a modification of the fourth embodiment;

Fig. 10 is a side elevational view for a grip member of the main body shown in Fig. 9;

Fig. 11 is a rear elevational view illustrating a mode of attaching the grip member to the main body;

Fig. 12 is a side elevational view for a main body in another modification of the fourth embodiment;

Fig. 13 is a side elevational view for the grip member of the main body shown in Fig. 12;

Fig. 14 is a rear elevational view illustrating a mode of attaching the grip member to the main body;

Fig. 15 is a side elevational view partially in cross section of a fifth embodiment according to the present invention;

Fig. 16 is a plan view partially in cross section of the fifth embodiment;

Fig. 17 is a cross sectional view taken along lines 17-17 in Fig. 15;

Fig. 18 is a side elevational view for a base of a protrusion shown in Fig. 15;

Fig. 19 is a longitudinal cross sectional view of a sixth embodiment according to the present invention;

Fig. 20 is a cross sectional view taken along lines 20-20 shown in Fig. 19;

Fig. 21 is a longitudinal cross sectional view of a seventh embodiment according to the present invention;

Fig. 22 is a longitudinal cross sectional view for a modification of the seventh embodiment;

Fig. 23 is a longitudinal cross sectional view of an eighth embodiment in an opened state according to the present invention;

Fig. 24 is a view taken along lines 24-24 shown in Fig. 23;

Fig. 25 is a side elevational view partially in cross section of a ninth embodiment according to the present invention;

Fig. 26 is a side elevational view of a tenth embodiment according to the present invention;

Fig. 27 is a rear elevational view of the tenth embodiment;

Fig. 28 is a side elevational view partially in cross section for a modification of the tenth embodiment;

Fig. 29 is a side elevational view of an eleventh embodiment according to the present invention;

Fig. 30 is a longitudinal cross sectional view of a twelfth embodiment according to the present invention;

Fig. 31 is a plan view of the twelfth embodiment;

Fig. 32 is a side elevational view for a grip member attached to the grip main body shown in Fig. 30;

Fig. 33 is a longitudinal cross sectional view of a thirteenth embodiment according to the present invention; and

Fig. 34 is a plan view of the thirteenth embodiment.

## DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

The present invention will now be described with reference to the accompanying drawings. In each of the drawings, identical or corresponding components or parts carry the same reference numerals, for which duplicate explanations will be omitted.

Figs. 1 and 2 show a first embodiment according to the present invention. In the figures, a grip main body 1 has anti-slip grooves 2 formed at the upper surface 1a thereof. The anti-slip grooves 2 comprise a groove 2A which is disposed at a position localized toward one end of the grip main body 1 and on which a forefinger is to be positioned, and three grooves 2B, 2C and 2D which are disposed continuously from a position somewhat remote from the groove 2A toward the other end, each separated by means of a small protrusion 3, and on which a middle finger, a third finger and a little finger are to be positioned, respectively. Between the groove 2A engaged by the forefinger and the groove 2B engaged by the middle finger, is disposed a protrusion 4 that protrudes markedly as compared with small protrusions 3, from the grip main body 1 toward the orthogonal direction. The base portion of the protrusion 4 is constricted to be put between the forefinger and the middle finger.

Further, the grip main body 1 also has protrusions 5 and 6 protruding markedly from both axial ends in the axial direction respectively.

There is no particular restriction on the material of the gripping type self-defending tool of this embodiment, for which various materials such as wood, plastic, metal, ceramic, etc. can be used.

The operation of the self-defending tool will now be described.

The gripping type self-defending tool having the constitution as described above is made so compact as to be held within a palm and can be carried about easily being put into a handbag or a pocket. Upon use, it is gripped by positioning fingers on the anti-slip grooves 2 of the grip main body 1. Basically, it is preferably gripped by positioning the forefinger on the groove 2A, the middle finger on the groove 2B, the third finger on the groove 2C and the little finger on the groove 2D. When it is gripped in this way, the protrusion 4 protrudes between the forefinger and the middle finger of a knuckle, as well as the protrusion 5 protrudes on the side of the thumb and the protrusion 6 protrudes on the side of the little finger of the knuckle respectively. It may be gripped either by a right or left hand. In this way, the grip main body 1 is concealed by a gripping hand and is less recognizable by an opponent.

When the opponent makes little of a woman or an old man as being feeble, the user can thrust or enforce the knuckle of the gripping hand straight forward to the opponent, whereby the force is concentrated to the top end of the protrusion 4 of a small area and can give the opponent a surprise attack with a powerful impact.

Alternatively, the user can swing down a vertically positioned knuckle of a hand gripping the gripping type self-defending tool thereby striking, for example, the opponent's hand or foot by the protrusion 6 on the side of the little finger, on the contrary, striking upward the vertically positioned knuckle from below thereby striking, for example, an opponent's jaw by the protrusion 5 on the side of the thumb, or can swing the tool horizontally thereby attacking the opponent's side, etc. to give a strong impact. In this way, it is possible to optionally use the tool to give an effective shot to the opponent with no particular requirement of skills in the way of use and an extremely useful effect as the self-defending tool can be attained.

Furthermore, the tool also has a merit that it is applied for so-called finger pressure therapy by pressing it to a stiffened part of a body when a user becomes wearied.

Fig. 3 shows a second embodiment of the present invention.

In this embodiment, a grip main body 1 is made hollow, in which a weight 8 comprising a plurality of metal particles are contained. The hollow portion 7 is opened at one end to which a female thread is formed for screw-coupling with a protrusion 5 having a male thread 5a.

The function and the operation of the second embodiment are fundamentally identical with those of the first embodiment, and it has a merit in that the impact force upon striking or thrusting can be made more powerful being combined with the inertia caused by the weight 8 disposed in the hollow portion 7.

Fig. 4 shows a third embodiment according to the present invention.

This embodiment is different from each of the embodiments described above in that a guard 10 surrounding anti-slip grooves 2 is disposed to a grip main body 1. The guard 10 is protruded from the upper portion of the grip main body 1, and the top end of a protrusion 4 is markedly protruded further above the guard 10. The guard 10 in this embodiment comprises a guard 10a that surrounds a groove 2A for protecting the forefinger, and a guard 10b that surrounds grooves 2B, 2C and 2D in common for protecting the middle finger, the third finger and the little finger. In this figure, a support stud 3A supports the guard 10a, and the protrusion 4 is supported on the support stud 3A.

5 In this embodiment, since the hand gripping the grip main body 1 is protected by the guard 10, when the user strikes or thrusts an opponent by the protrusion 4, the protrusion 5 on the side of the thumb, the protrusion 6 on the side of the little finger or the like, the user is free from the worry of suffering from damages to the hand and the tool can be used more safely.

10 Fig. 5 shows a modification of the third embodiment, in which guards 10a, 10c, 10d and 10e individually surrounding grooves 2A, 2B, 2C and 2D are supported by support studs 3A, 3B and 3C respectively. This can provide a more effective guard than the guard 10b for surrounding the grooves 2B, 2C and 2D in common shown in Fig. 4.

15 In addition, various other modifications are possible such as providing the guard for protecting only the forefinger, providing the guard for protecting only the middle finger, providing the guard for protecting the forefinger and the middle finger or providing the guard for protecting the middle finger, the third finger or the little finger.

20 Fig. 6 through Fig. 8 show a fourth embodiment according to the present invention.

25 In this embodiment, the grip main body 1A is made of plastic or metal material and the sides of the body portion thereof are made flat. The flat body portion was cut out at several positions to form holes 11 thereby reducing the weight of the tool. As shown in Fig. 8, a grip member 12 made of plastic or wood with anti-slip knurling is engaged on each of right and left sides of the body portion of the grip main body 1A and attached by means of screws. 13 represents a screw insertion hole. By providing the grip member 12 separately, anti-slip means can be formed easily, and the weight thereof can be reduced easily with the grip main body 1A being formed firmly by metal material, so that a gripping type self-defending tool easy to use and providing a powerful effect can be obtained.

30 Fig. 9 through Fig. 11 illustrate a modification of the fourth embodiment. A grip member 12A is not separated into two right and left components but formed as a one piece member having a groove 14 to which the flat body of the grip main body 1A is fit. The grip member is attached by fitting the grip main body 1A into the groove 14 and setting it with screws. The operation and the 35 advantageous effect of this embodiment are the same as those in the fourth embodiment.

40 Fig. 12 through Fig. 14 shows a further modification of the fourth embodiment. A grip member 12B is of the same type as the above-mentioned modification having a groove 14 for fitting the grip main body 1A, excepting that anti-slip protrusions 50 15 are formed on both ends of the grip. Since the grip member 12B is attached, the gripping hand

can be prevented from slipping by the anti-slip protrusions 15, in particular, when the user strikes an opponent by using the protrusion 5 on the side of the thumb or the protrusion 6 on the side of the little finger of the gripping hand, so that more powerful impact can be applied to the opponent.

Fig. 15 through Fig. 18 illustrates a fifth embodiment according to the present invention.

In this embodiment, a protrusion 4 is made foldable. That is, a protrusion containing recess 17 is formed to a grip main body 1 and opens at the upper surface of the main body. On the other hand, the protrusion 4 is formed separately from the grip main body 1, in which a base 4A of the protrusion in a disc shape has an axial hole 18 at the center of the disc. A square recess 19 is formed to one open end of the axial hole 18 as shown in Fig. 18.

The base 4A of the protrusion 4 is fit into the protrusion containing recess 17 being localized to the end thereof and rotatably supported around a shaft 20 that laterally penetrates the grip main body 1 while passing through the shaft hole 18. The shaft 20 has a square lock 21 at one end and a female thread 22 formed at the other end, to which a lock release switch 23 is screw-coupled, so that the lock 21 enters into and retracts from the square recess 19 disposed on one end of the shaft hole 18 of the protrusion 4 by the lateral sliding of the switch to the grip main body 1. A long recess 24 formed in the axial direction on one side of the grip main body 1, and a square hole 25 extending from the recess 24 to the protrusion containing recess 17 is opened at a position corresponding to the square recess 19 of the protrusion 4. Further, a recess 26 through which the lock release switch 23 enters or retracts is disposed on the opposite side of the grip main body 1.

A torsion coil spring 27 (hereinafter referred to as a spring) is mounted to the shaft 20 for resiliently turning up the protrusion 4, and the spring 27 abuts at one end to the bottom face of the protrusion containing recess 17 and is urged at the other end to the side of the protrusion 4. Further, a leaf spring 28 is attached by means of a small screw 29 in the recess 24 on the side of the grip main body 1 for resiliently urging the end face of the lock 21 of the shaft 20.

When the gripping type self-defending tool of this embodiment is to be carried about, the protrusion 4 is folded and contained within the protrusion containing recess 17 of the grip main body 1. Upon use, the protrusion 4 is turned upward as shown below. (1) The lock release switch 23 is enforced into the recess 26 against the resiliency of the leaf spring 28. (2) Then, since the engagement between the square lock 21 of the shaft 20 and the square recess 19 of the protrusion 4 is released, the protrusion 4 is turned upward by the resiliency of

the spring 27. (3) When the depression to the lock release switch 23 is removed, the shaft 20 is caused to slide by the resiliency of the leaf spring 28, whereby the lock 21 engages the square recess 19 of the protrusion 4, to lock the protrusion 4 in the turned-up state.

In this way, the same gripping type self-defending tool as that shown in Fig. 1 is obtained.

The protrusion 4 can be restored by turning it downward by a hand in a state where the lock release switch 23 is enforced into the protrusion containing recess 17 against the resiliency of the spring 27.

The gripping type self-defending tool of this embodiment can provide the same advantageous effect as that of the previously described first embodiment, as well as also provide an advantageous effect that the protrusion 4 can be turned downward to reform the tool into a short rod, which is more compact and much convenient to carry about. The self-defending tool may also be used by gripping it the protrusion 4 being turned downward and striking an opponent by using only the protrusion 4 on the side of the thumb or the protrusion 6 on the side of the little finger.

Figs. 19 and 20 illustrates a sixth embodiment of the present invention.

In this embodiment, a protrusion 4 is also made foldable, but a locking mechanism for the protrusion 4 is different from the fifth embodiment described above. The locking mechanism of this embodiment comprises a slide lock plate 32 that is inserted into a through hole 31 laterally penetrating a grip main body 1 and attached axially slidably to the grip main body 1. The slide lock plate 32 has knobs 32A screwed to both end faces thereof exposed to the sides of the main body 1 and is always biased resiliently toward a rotational shaft 20A of a protrusion 4 by a compression coil spring 34 mounted within a spring containing recess 33 formed axially in the grip main body 1. On the other hand, the disc-shaped base 4A of the protrusion 4 has grooves 35a and 35b, for engagement with the slide lock plate 32 formed at two positions on the outer circumference of the disc-shaped base 4A of the protrusion 4, being displaced by 90° from each other.

In this embodiment, one end of a spring 27 for resiliently turning the protrusion 4 upward is retained by a protrusion 36 protruded on the base 4A, but the spring may also be wound around the side of the protrusion 4 as in the fifth embodiment described above.

In the state of containing the protrusion shown in Fig. 19, the slide lock plate 32 engages the recess 35a of the protrusion 4. Upon use, when fingers are positioned on the knobs 32A to pull them axially against the resiliency of the compres-

sion spring 34, engagement between the slide lock plate 32 and the recess 35a is released and the protrusion 4 turns upward instantly by the resiliency of the spring 27. When the fingers are detached from the knobs 32A in this state, the slide lock plate 32 advances by the resiliency of the compression coil spring 34 and engages into the recess 35b of the protrusion 4 to lock it in the upwardly turned state.

The sixth embodiment has the same advantageous effects as those in the fifth embodiment described above.

Fig. 21 illustrates a seventh embodiment.

This embodiment provides a gripping type self-defending tool of a compound structure in which a protrusion 4 is made foldable and a foldable knife is incorporated. Accordingly, a knife containing recess 37 is formed together with a protrusion containing recess 17 in a grip main body 1. Slits are disposed longitudinally at the bottom of both of the recesses 17 and 37, in which a lock plate 38 constituting the locking mechanism for the protrusion 4 is fit into the former slit, while a lock plate 41 constituting the locking mechanism for the knife 40 is fit into the latter slit.

The lock plate 38 is supported vertically rotatably by a rotational shaft 38a formed to the grip main body 1 and is resiliently biased at the upper surface on the rear end by a spring 27A, whereby a top end protrusion 38b is normally biased resiliently toward a rotational shaft 20A of a protrusion 4. On the other hand, recesses 42a and 42b are formed to the outer circumference of a disc-shaped base 4A of the protrusion 4 at positions being displaced by 90° from each other, so that the top end protrusion 38b of the lock plate engages the recess 42a in a state where the protrusion 4 is turned upward as illustrated in the figure, whereas the top end protrusion 38b engages the recess 42b in a state where the protrusion 4 is folded. One side of the recess 42b is formed as a slanted curved surface 42c.

The lock plate 41 for the knife 40 is supported vertically rotatably by a rotational shaft 41a formed to the grip main body 1 and resiliently biased at the upper surface on the rear end by a spring 27B, whereby the top end protrusion 41b is always urged to the base of the knife 40. The knife 40 is rotatably supported by a rotational shaft 40a and a recess 43 is formed to the base thereof for engagement with the top end protrusion 41b when the knife is drawn-out.

Upon use, the protrusion 4 is picked by fingers and turned upward. In this case, engagement between the top end protrusion 38b of the lock plate 38 and the recess 42b is spontaneously released since the top end protrusion 38b is forced out by the effect of the slanted curved surface 42c, and

the top end protrusion 38b is engaged into the recess 42a to lock the protrusion 4 when the latter stands vertically.

In this way, a user can strike or thrust an opponent by using, for example, the protrusion 4, the protrusion 5 on the side of the thumb, the protrusion 6 on the side of the little finger or the like as in the first embodiment described above. Upon folding the protrusion 4, a finger tip is inserted through the opening 44 on the side of the bottom and the top end of the lock plate 38 is pulled downward to release the lock.

The knife 40 as an auxiliary part is drawn-out by rotation around the rotational shaft 40a as an axis and used as a weapon, if required. Alternatively, it may be used properly for other uses such as peeling fruits or the like.

Fig. 22 illustrates a modification for the seventh embodiment in which the protruding direction of a protrusion 4 is made variable. That is, the protrusion 4 can be protruded not only vertically to a grip main body 1, but also in the extending direction of the grip main body 1. When the protrusion 4 stands vertically, it is locked by the engagement of a top end protrusion 38b of a lock plate 38 into a recess 42a. In this state, a user can strike or thrust an opponent by using the protrusion 4, a protrusion 5 on the side of the thumb and a protrusion 6 on the side of the little finger in the same manner as in the first embodiment.

On the other hand, when a finger is inserted from an opening 44 and the top end protrusion 38b of the lock plate 38 is pulled downward to release the lock, the protrusion can be turned downward manually to the side of the thumb. In this case, the protrusion 4 is locked by the engagement of the top end protrusion 38b with the lock plate 38 of the recess 42b. The protrusion 4 protrudes in the extending direction of the grip main body 1 and can be used as a more sharp protrusion on the side of the thumb.

Figs. 23 and 24 illustrate an eighth embodiment.

This embodiment comprises a grip main body 1 longitudinally bisected into a pair of a half grip member 1A and a half grip member 1B in which the half grip members 1A and 1B are foldably abutted to each other. Each of the half grip members 1A and 1B has, formed therein, a protrusion containing recess 46 of such a size as capable of containing each longitudinal half of the protrusion 4, and the abutting side of the recess 46 is opened. A base 4A of the protrusion 4 is fit into the opening, and each of the half grip members 1A and 1B is rotatably supported to the base 4A of the protrusion by each of the shafts 47A and 47B as shown by each of arrows Y and Z. Springs 48A and 48B are mounted, respectively, to both of the shafts

47A and 47B, to resiliently bias the half grip members 1A and 1B, respectively, in the opening direction. Reference numeral 49 is a spring engaging pin secured to the protrusion 4. Further, a closing hook 51 is attached by a shaft 52 to the end of the half grip member 1A opposite to the abutting side and resiliently biased by a spring 53 in the closing direction. On the contrary, a hook engagement 54 for engaging the closing hook 51 is disposed to the end of the half grip member 1B on the side opposite to the abutting side.

Fig. 23 shows a state of using the tool. The half grip members 1A and 1B are opened and the protrusion 4 stands vertically. A user grips the grip main body 1 comprising the half grip members 1A and 1B so as to put the protrusion between the forefinger and the middle finger and strikes or thrusts an opponent by the protrusion 4.

When the self-defending tool is to be carried about, the half grip members 1A and 1B can be manually rotated against the resiliency of each of the springs 48A and 48B, closed to each other in a state shown by chained lines and the closing hook 51 is engaged to the hook engagement 54, so that the tool can be made much compact. Upon use, only if the lever 51a of the closing hook is depressed, engagement between the closing hook and the hook engagement 54 is released and the half grip members 1A and 1B are opened automatically by the resiliency of the springs 48A and 48B.

Fig. 25 illustrates a ninth embodiment.

This embodiment provides a gripping type self-defending tool that serves also as a writing utensil. A grip member 57 having a plurality of anti-slip grooves 56 has a ball-point pen 58 mounted in its axial center, and a cap 59 capable of operating as a protrusion on the side of the little finger is screw-coupled to the top end of the grip member 57. In this embodiment, a seal 60 is attached to the other end of the grip member 57 and it is covered by a cap 61 capable of operating as a protrusion on the side of the thumb. A protrusion 4 is protruded in perpendicular to the outer surface of the grip member 57, so that it can be used for the self-defending purpose, for example, by thrusting an opponent by the protrusion 4 or swinging it down on the opponent by the caps 59 and 61 on the ends of the grip member while gripping the grip member 57. Further, the writing utensil is not restricted only to the ball-point pen but a pencil, sharp pencil or the like may also be used.

Figs. 26 and 27 illustrate a tenth embodiment.

This embodiment provides a gripping type self-defending tool that serves also as a key holder. A rod-like grip member 63 having a protrusion 4 protruded in perpendicular therefrom has an elliptic lateral cross sectional shape with a plurality of anti-slip grooves 56 being formed on the outer surface.

The grip member 63 has a protrusion 5 on the side of the thumb and a protrusion 6 on the side of the little finger, as well as a key attaching ring 64 disposed on one end. The cross sectional shape of the grip 63 may also be circular, but the elliptic shape is preferred since the protrusion 4 can easily be directed upon use as a self-defending tool and it can be used stably.

Fig. 28 shows a modification of the gripping type self-defending tool that serves also as a key holder, in which a hollow portion 65 is disposed to the inside of a grip member 63 shaped as a circular rod and a weight 8 comprising metal particles is contained in the hollow portion 65 to increase the impact shock.

Protrusions 5 and 6 on both axial ends of the grip member 63 are attached by screwing. Further, a protrusion 4 is provided being separated from the grip member 63 and set by a setting screw 66. Since this embodiment is adapted as the screw setting type, each of the protrusions 4, 5 and 6 can be replaceable as a detachable attachment and can optionally be replaced with a protrusion of other shape (for example, protrusions 5 and 6 of the shape as shown in Fig. 1). Such an attachment system may also be applicable to other embodiments.

Fig. 29 shows an eleventh embodiment.

This embodiment provides a gripping type self-defending tool that serves also as a cigarette pipe. That is, a pipe body is constituted as a grip member 70 having a protrusion 4 that stands vertically from the outer surface and anti-slip grooves 2 formed on the body. Usually, it can be utilized as a smoking tool by inserting a cigarette S to the opening at the top end not illustrated. Upon use as a self-defending tool, the grip member 70 is gripped by one hand and the protrusion 4 protruded between gripping fingers is used for striking or thrusting an opponent, or the protrusion 6 on the side of the little finger as a mouthpiece or the protrusion 5 on the side of the thumb as the insertion side of the cigarette, upon smoking, is used for striking the opponent.

Figs. 30 through Fig. 32 illustrate a twelfth embodiment.

This embodiment provides a gripping type self-defending tool incorporating a tear gas ejecting device and a knife together. That is, at the inside of a grip main body 1, are disposed a small reservoir 71 for a stimulating fluid, an ejection button device 73 for opening/closing a valve 72 at the top end of the fluid reservoir 71, an ejection nozzle 74 for ejecting a gas jetted out from the valve 72 to the outside and a fluid injection port 75 for supplementing a tear gas to the fluid reservoir 71.

The button head of the fluid ejection button device 73 is protruded to the inside of a recess 77 in a protrusion 5 on the side of the thumb and protected by a safety cover 78 for covering the recess 77. The safety cover 78 is pivotally supported by a pin 79 to the inside of the protrusion 5 on the side of the thumb so that it can be opened and closed and is normally biased resiliently to the closing side by a spring 80.

A foldable knife 40 is attached rotatably by a shaft 40a to the side of the protrusion 6 of the grip main body 1 on the side of the little finger and adapted to be locked in a folded state or drawn state by a lock plate 41 resiliently biased by a compression coil spring 81.

The side of the body of the grip main body 1 is covered with a grip 12C formed separately and having an anti-slip protrusion 15 at the end on the side of the little finger. Anti-slip on the side of the thumb is provided by a protrusion 74a of the ejection nozzle 74.

This embodiment can be used not only for striking or thrusting an opponent, for example, by the protrusion 4, the protrusion 5 on the side of the thumb and the protrusion 6 on the side of the little finger in the same manner as in the first embodiment but also can eject a gas, as required, to the opponent's face from the ejection nozzle 74 by opening the safety cover 78 and pushing the ejection button device 73, so that it can be used as a more powerful self-defending tool. As the stimulative fluid, a tear gas is preferred.

Figs. 33 and 34 illustrate a thirteenth embodiment.

This embodiment provides a gripping type self-defending tool incorporating a flashlight together with the same tear gas ejecting device as in the previous embodiment. That is, a small electric cell 82 is incorporated at the inside of a grip main body 1 on the side of the little finger, and a lead wire 83 is introduced therefrom by way of a switch 83A disposed to the surface of the grip main body 1 to the inside of a protrusion 4. The protrusion 4 is screw coupled with a cap 84 made of a transparent synthetic resin of high strength such as a polycarbonate and an electric lamp 85 is attached to the inside thereof in connection with the lead wire 83.

This embodiment has an advantageous effect in that it can be used also as a flashlight in addition to the advantageous effects of the twelfth embodiment described above.

In the present invention, it may be incorporated not only the tear gas ejecting means as described in each of twelfth and thirteenth embodiments described above but also other ejecting means such as for ejecting a liquid to blind opponent's eyes or ejecting a marking liquid.

As has been described above, according to the present invention, since the gripping type self-defending tool comprises a grip main body and a protrusion markedly protruding therefrom, the tool can be used simply by any one with no particular skills for the manipulation and it is small in size and convenient to carry about and can exert a powerful impact on an opponent to thereby hinder opponent's evil intention.

### Claims

1. A gripping type self-defending tool comprising a grip main body of a length suitable to gripping by one hand and a protrusion markedly protruding from said grip main body.
2. A gripping type self-defending tool as defined in claim 1, wherein a protrusion markedly protruding in the direction perpendicular to the longitudinal direction of the grip main body is disposed at a position localized toward one end of said grip main body, recesses corresponding to the shape of fingers for gripping are disposed to the surface of said grip main body on the side from which the protrusion is protruded, and other protrusions markedly protruding from both ends of said grip main body in the longitudinal direction are disposed.
3. A gripping type self-defending tool as defined in claim 2, wherein the grip main body is made hollow and a weight comprising a plurality of metal particles is contained in the hollow portion.
4. A gripping type self-defending tool as defined in claim 2, wherein a guard is extended from both ends of the grip main body so as to oppose to the recesses formed to the grip main body in a shape corresponding to that of fingers for gripping, at least with a sufficient gap from said recesses corresponding to the shape of the fingers for gripping to allow the fingers to be positioned therein, a support stud is vertically extended from said grip main body to said guard to provide a guard supporting structure, and a protrusion protruding along the extension of said support stud is disposed at a portion of said guard supported by said support stud.
5. A gripping type self-defending tool as defined in claim 4, wherein support studs are disposed also at other positions of the grip main body than the position for the protrusion markedly protruding in the direction perpendicular to the longitudinal direction of said grip main body.

6. A gripping type self-defending tool as defined in claim 1, wherein the grip main body has a flat shape, the protrusion markedly protruding in the direction perpendicular to the longitudinal direction of said grip main body protrudes in the lateral direction of said grip main body, and grip members applied with anti-slip fabrication are put and secured on both flat sides of said grip main body. 5

7. A gripping type self-defending tool as defined in claim 1, wherein the protrusion markedly protruding in the direction perpendicular to the longitudinal direction of the grip main body is pivoted by a shaft to the grip main body so that it can be turned upward or downward and is normally biased resiliently in the direction of turning upward by a spring disposed in said grip main body, and a locking switch means is disposed to the pivotal portion of said protrusion for selectively setting one of two pivotal positions displaced from each other by 90° or releasing this positional setting. 10

8. A gripping type self-defending tool as defined in claim 7, wherein the locking switch means includes a square recess formed in a shaft hole of a protrusion markedly protruding in the direction perpendicular to the longitudinal direction of the grip main body, a square lock member formed in the pivotal shaft, and a square hole formed in said grip main body, in which the pivotal shaft is held axially movably in said shaft hole, said square lock member is normally biased resiliently by a spring to a position where said square lock member is normally engaged in common to said square recess and said square hole, and the moving distance of said pivotal shaft is defined such that said square lock member can detach from said square recess when said pivotal shaft is moved against the resiliency of said spring. 15

9. A gripping type self-defending tool as defined in claim 7, wherein the lock switch means includes two notches disposed to the outer circumference of the pivotal portion of a protrusion markedly protruding in the direction perpendicular to the longitudinal direction of the grip main body at positions displaced from each other by a rotational angle of 90°, such that the protrusion can be locked selectively to the position of turning upward or downward, a slide lock member disposed in said grip main body, normally biased resiliently by a spring to the outer circumference of the pivotal portion of said protrusion and can be selectively engaged to said two notches, and knobs in con- 20

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nection with said slide lock member and capable of retracting the slide lock member against the resiliency of said spring thereby releasing the engagement with said notch. 5

10. A gripping type self-defending tool as defined in claim 7, wherein the protrusion markedly protruding in the direction perpendicular to the longitudinal direction of the grip main body has such a length as capable of also serving as a protrusion markedly protruding from the end of said grip main body and pivoted to said grip main body so that it can be turned upward and downward to said grip main body, while the locking switch means comprises two notches disposed to the outer circumference of the pivotal portion of said protrusion at two positions displaced from each other by a rotational angle of 90° and a lock member disposed to said grip main body, normally biased resiliently toward the outer circumference of said pivotal portion of said protrusion and capable of selectively engaging said two notches. 10

11. A gripping type self-defending tool as defined in claim 1, wherein the grip main body comprises two portions pivoted to a base end of the protrusion markedly protruding in the direction perpendicular to the longitudinal direction of said grip main body so as to be capable of opening and closing right- and left-wardly, the opening position for each of the two portions is restricted substantially to an angle of 90° from said protrusion and said two portions constitute a sheath for covering said protrusion from the right and left thereof at the closed position. 15

12. A gripping type self-defending tool as defined in claim 11, wherein the two portions of the grip main body are normally biased resiliently by a spring in the opening direction and has a hook mechanism for folding them at the closing position against the resiliency of said spring. 20

13. A gripping type self-defending tool as defined in claim 2, wherein the grip main body comprises a writing utensil and protrusions markedly protruding from the right and left ends thereof are hard caps for covering mechanisms necessary for manuscripting operation. 25

14. A gripping type self-defending tool as defined in claim 1, wherein a key attaching ring is provided to one end of the grip main body. 30

15. A gripping type self-defending tool as defined in claim 1, wherein the grip main body comprises a cigarette pipe.

16. A gripping type self-defending tool as defined in claim 1, wherein the grip main body incorporates at the inside thereof a reservoir of a stimulating gas and has a gas ejection nozzle and an ejection button device at one end thereof. 5

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17. A gripping type self-defending tool as defined in claim 2, wherein the grip main body incorporates, at the inside thereof, a reservoir for a stimulating gas and a battery and has a gas injection nozzle and an ejection button device on one end thereof, a transparent and hard cap is disposed to the top end of a protrusion markedly protruding in the direction perpendicular to the longitudinal direction of said grip main body, and an electric lamp connected by means of a switch to said battery is disposed in the cap. 15

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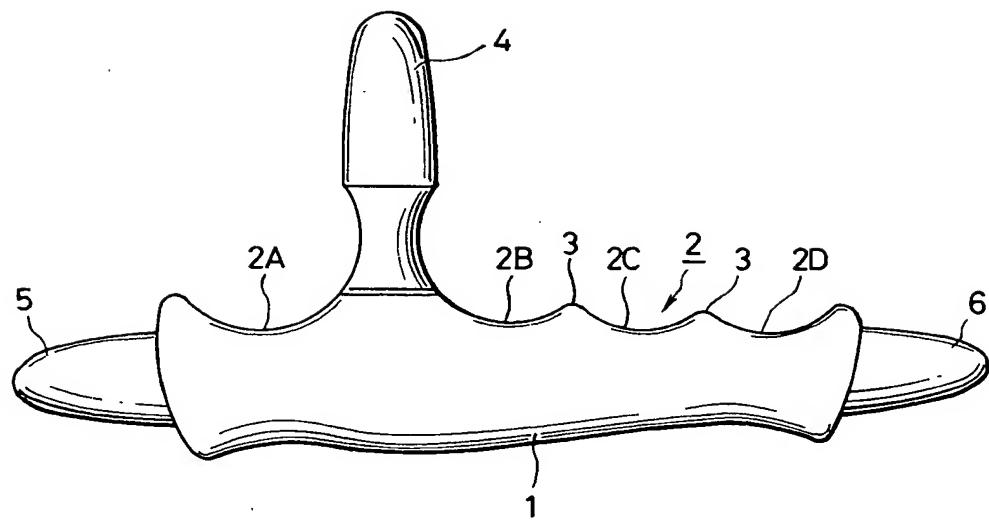
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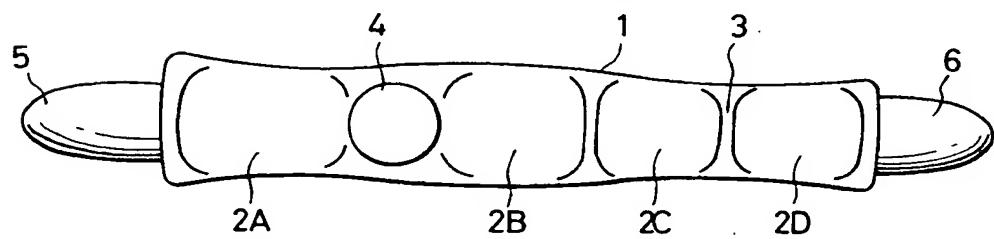
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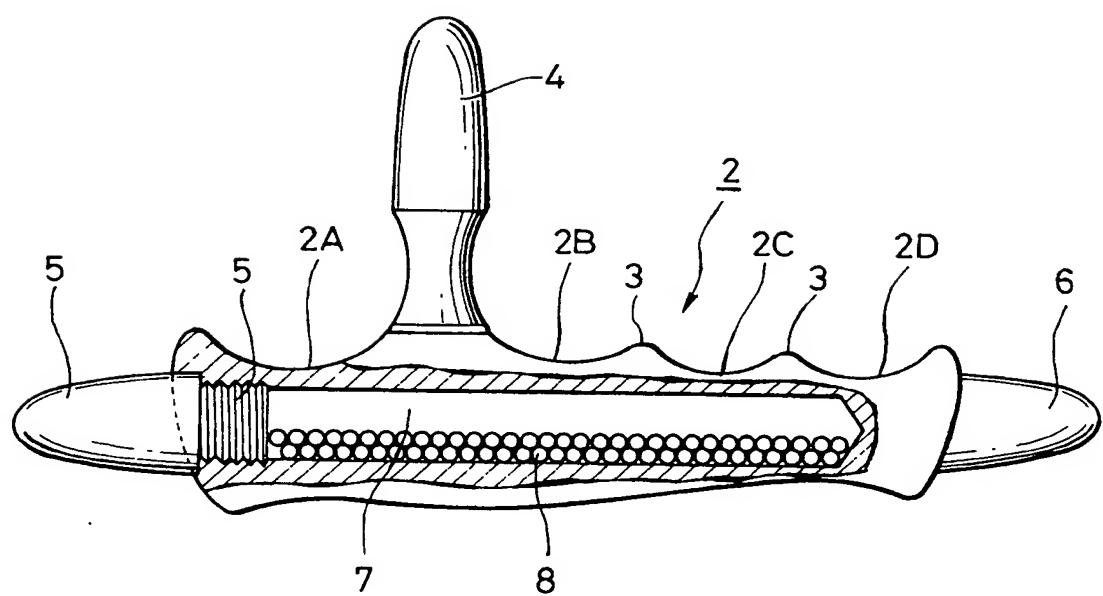
**FIG.1**



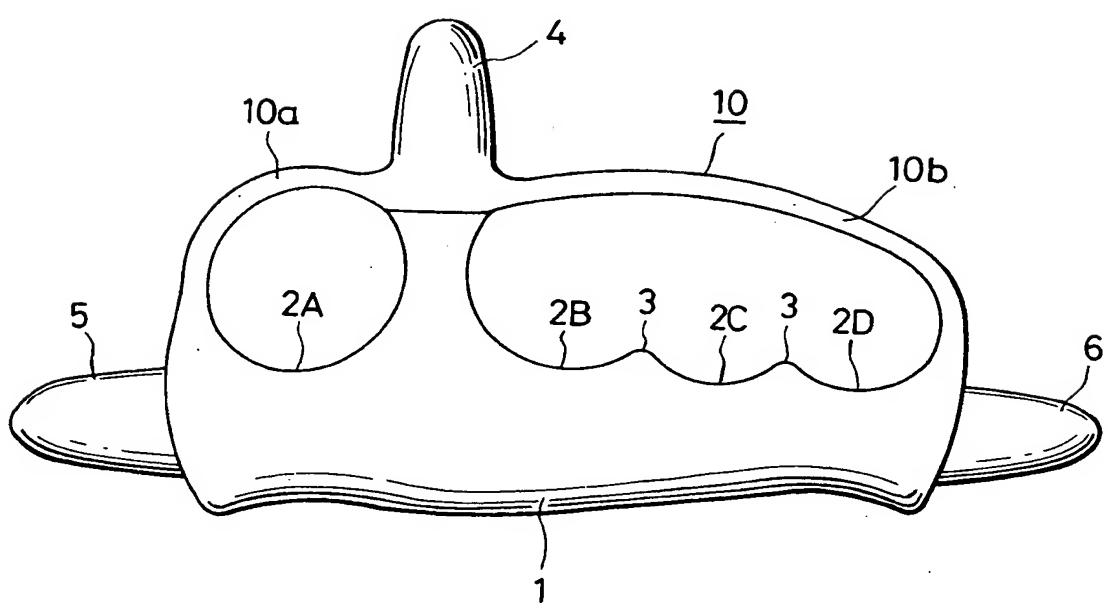
**FIG.2**



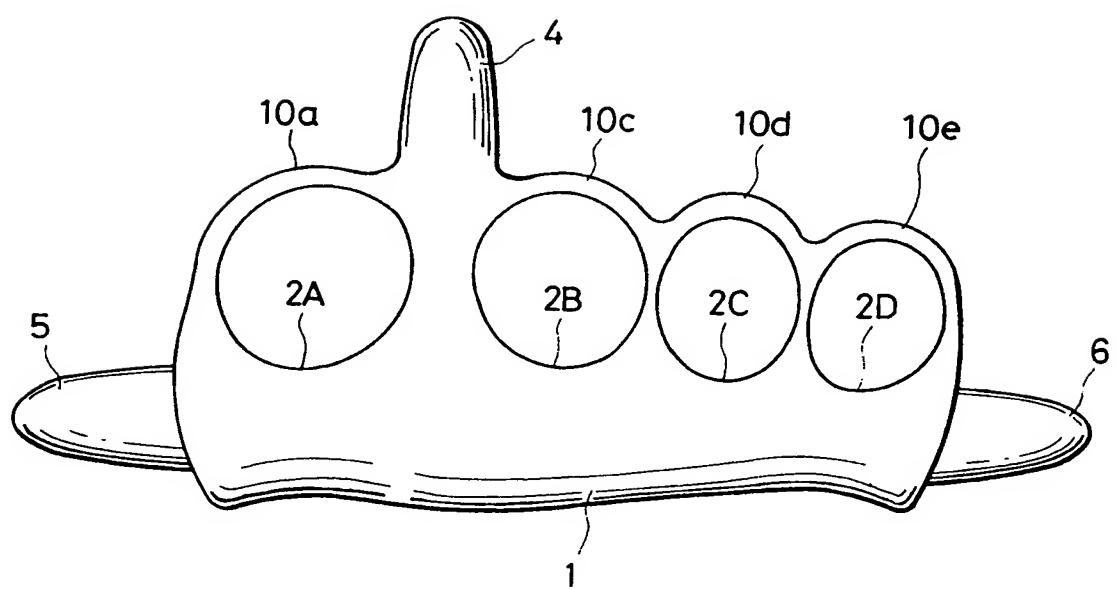
**FIG. 3**



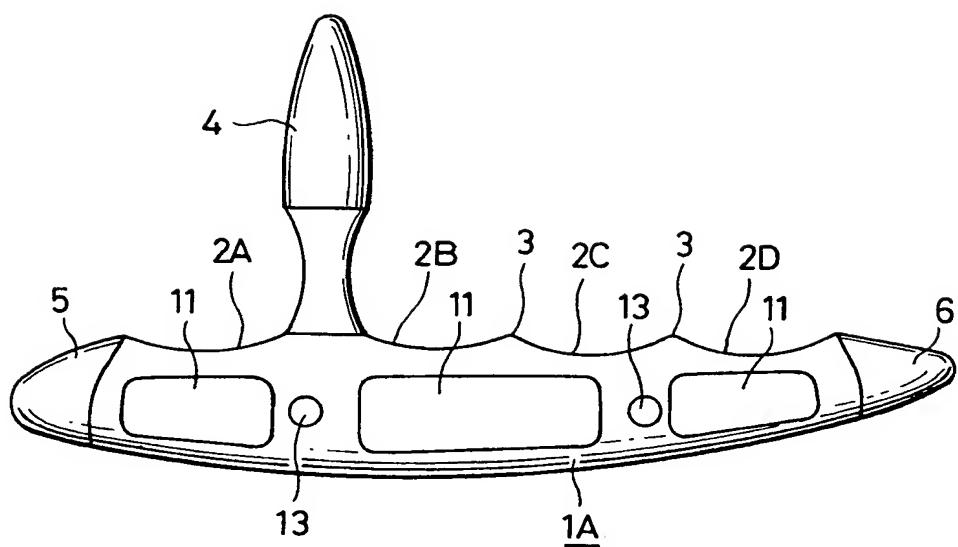
**FIG. 4**



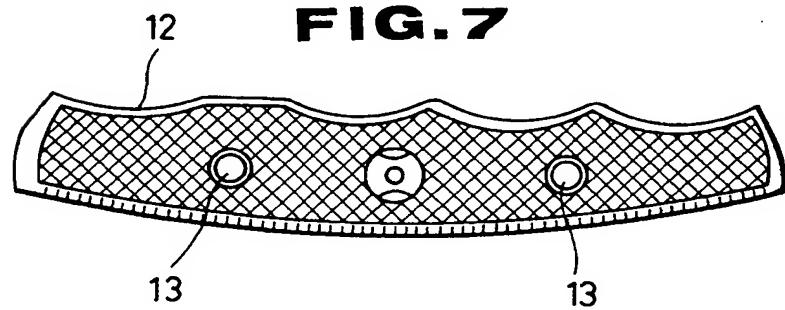
**FIG. 5**



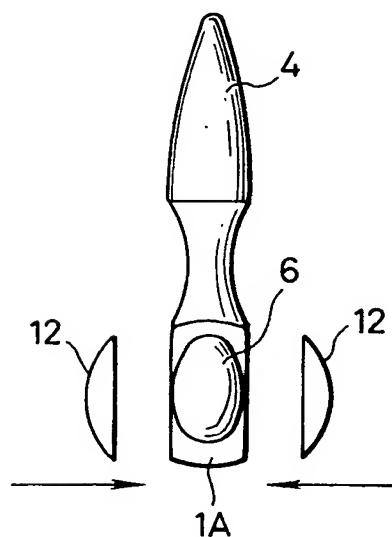
**FIG. 6**



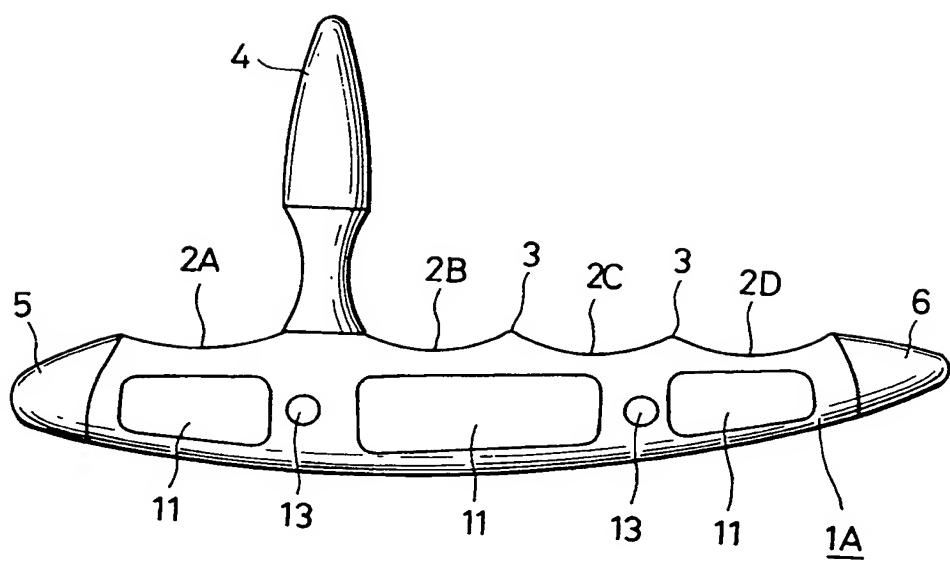
**FIG. 7**



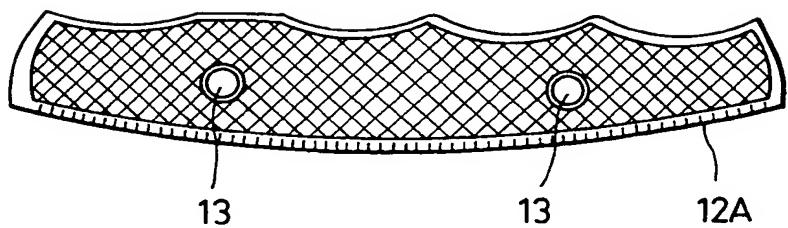
**FIG. 8**



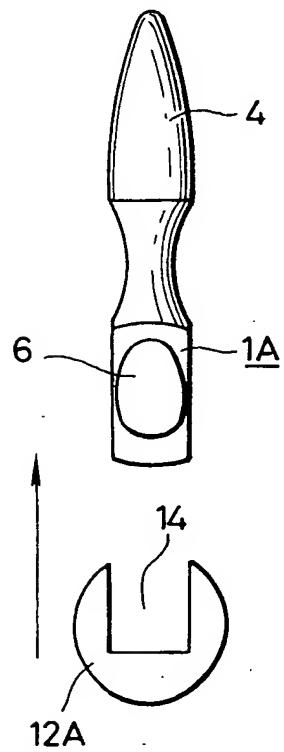
**FIG. 9**



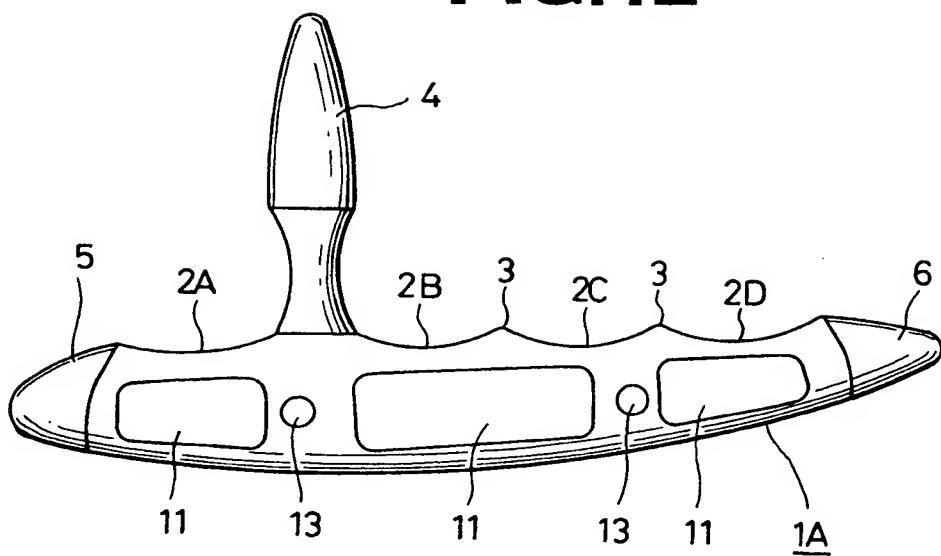
**FIG. 10**



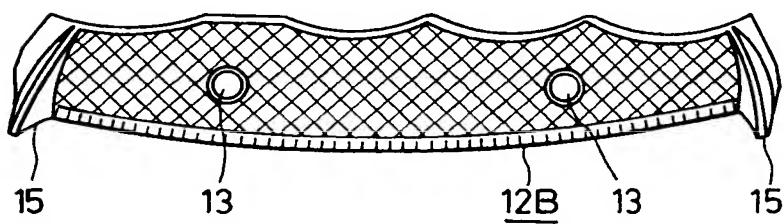
**FIG. 11**



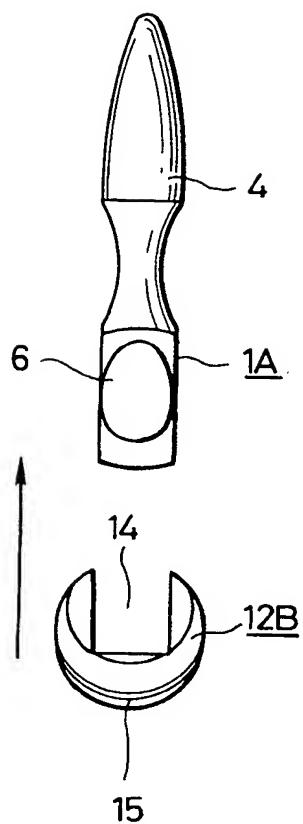
**FIG. 12**



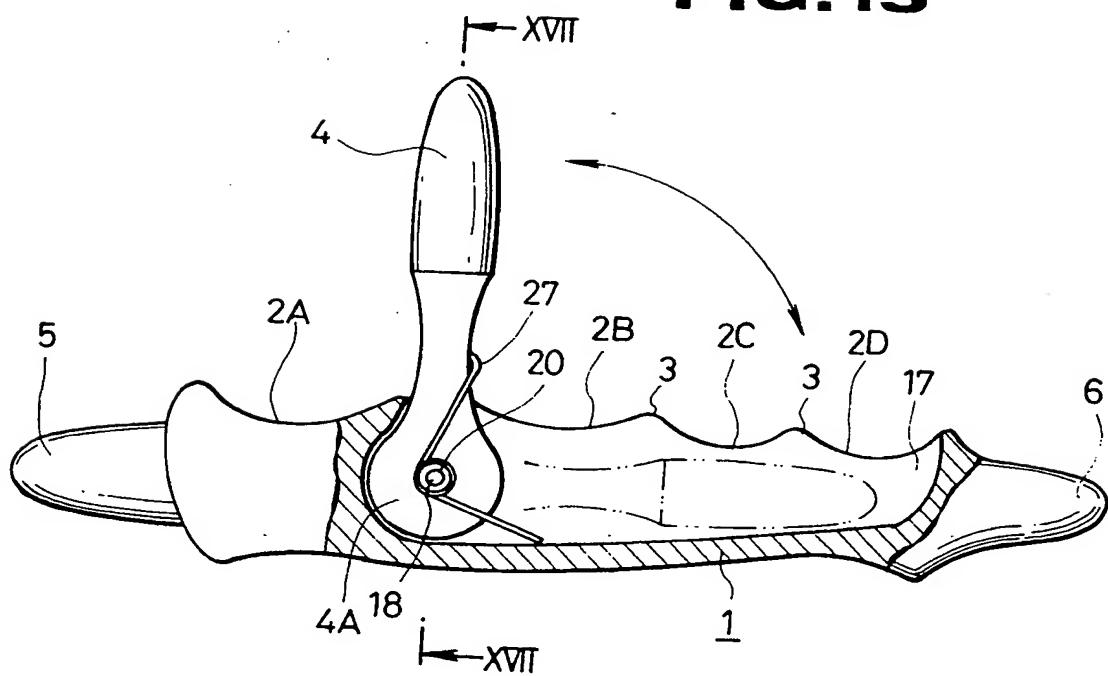
**FIG. 13**



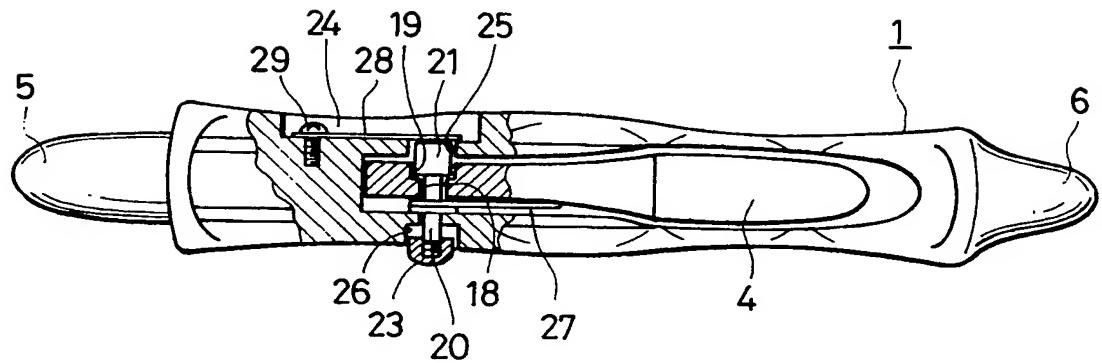
**FIG. 14**



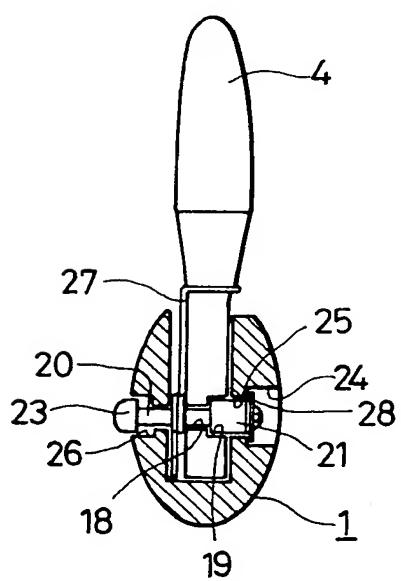
**FIG. 15**



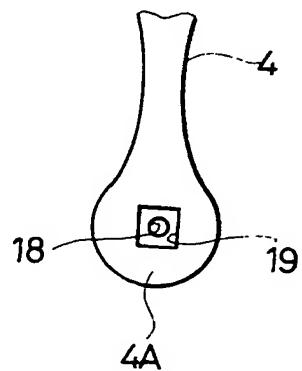
**FIG.16**



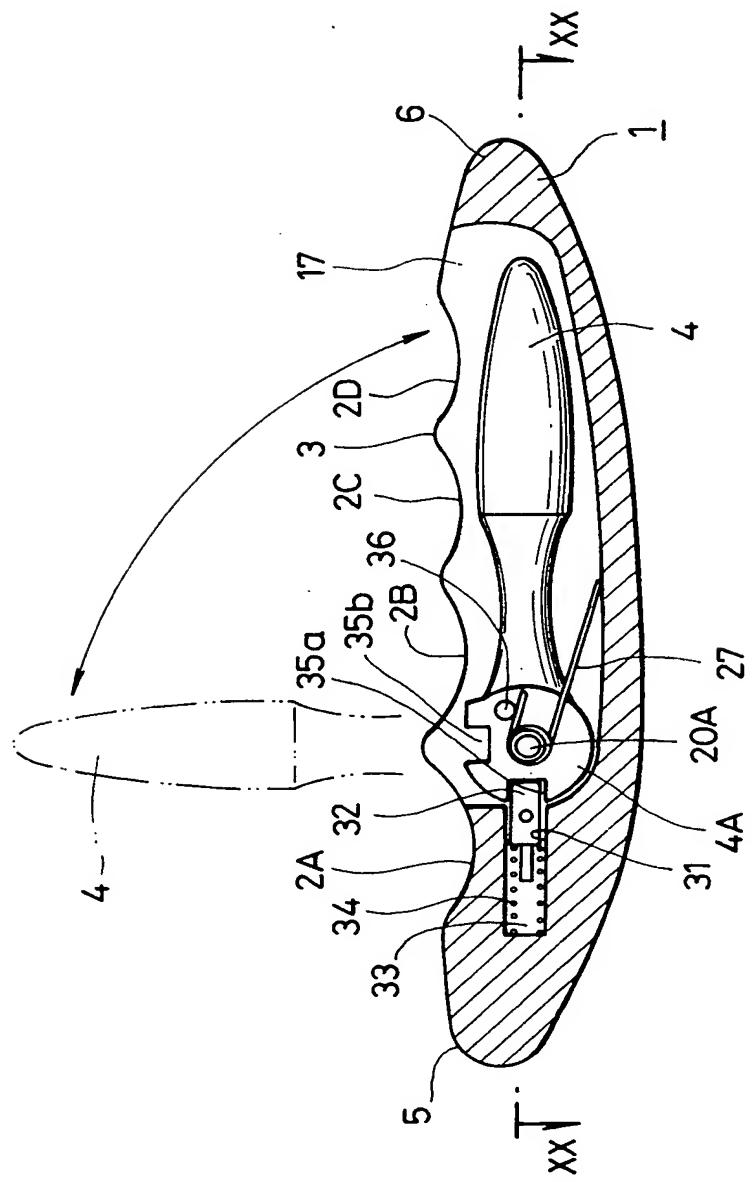
**FIG. 17**



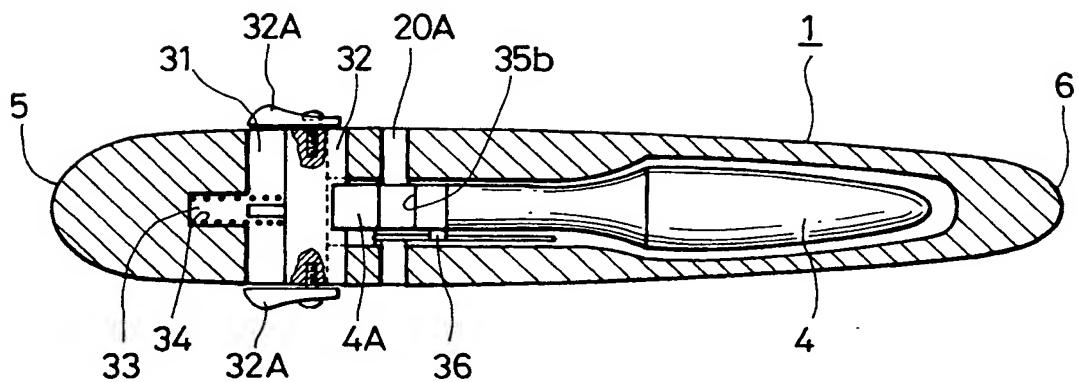
**FIG. 18**



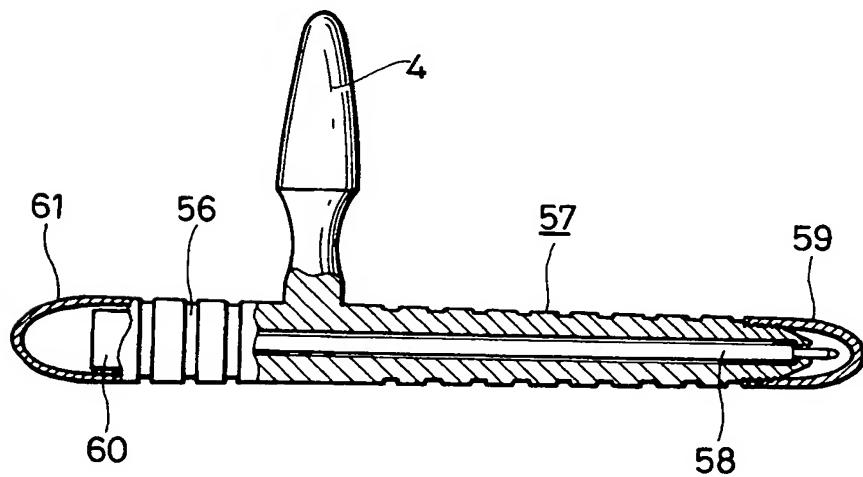
**FIG.19**



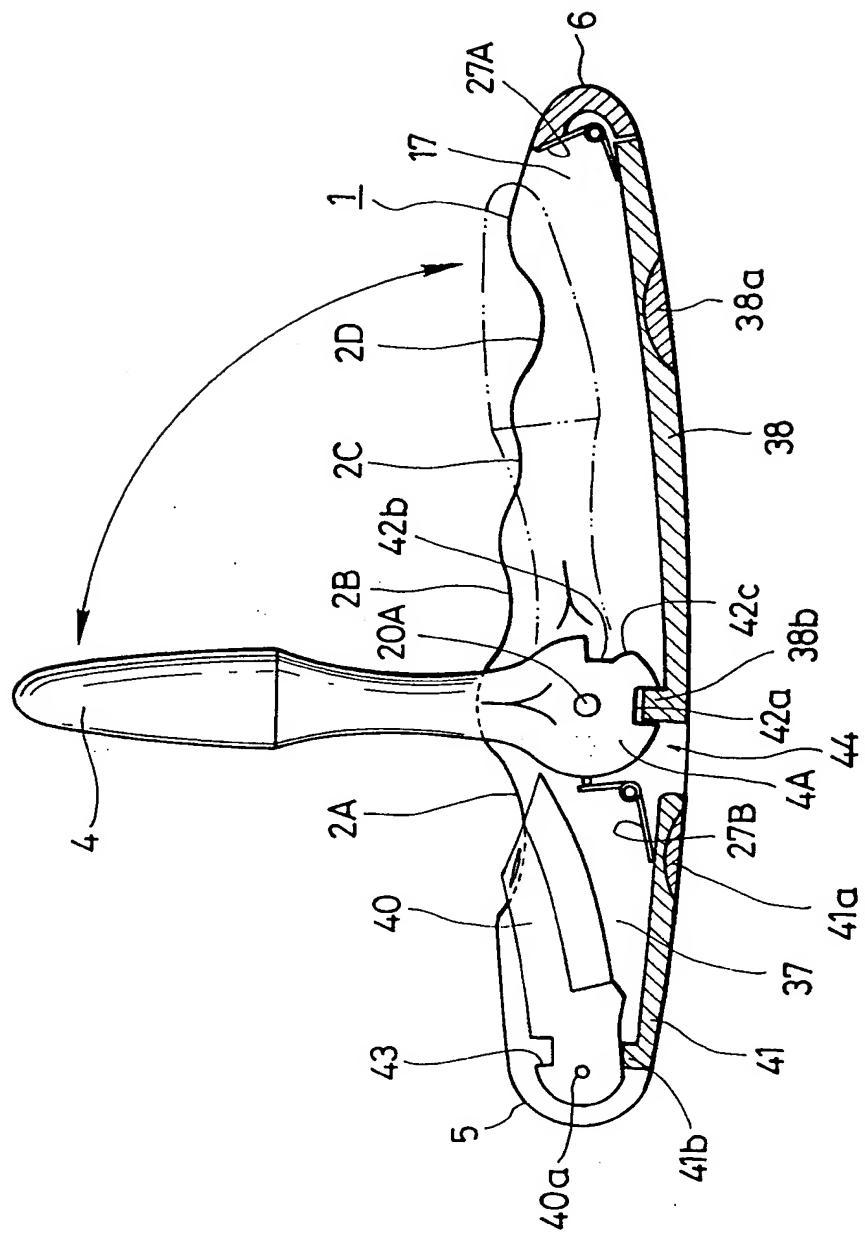
**FIG. 20**



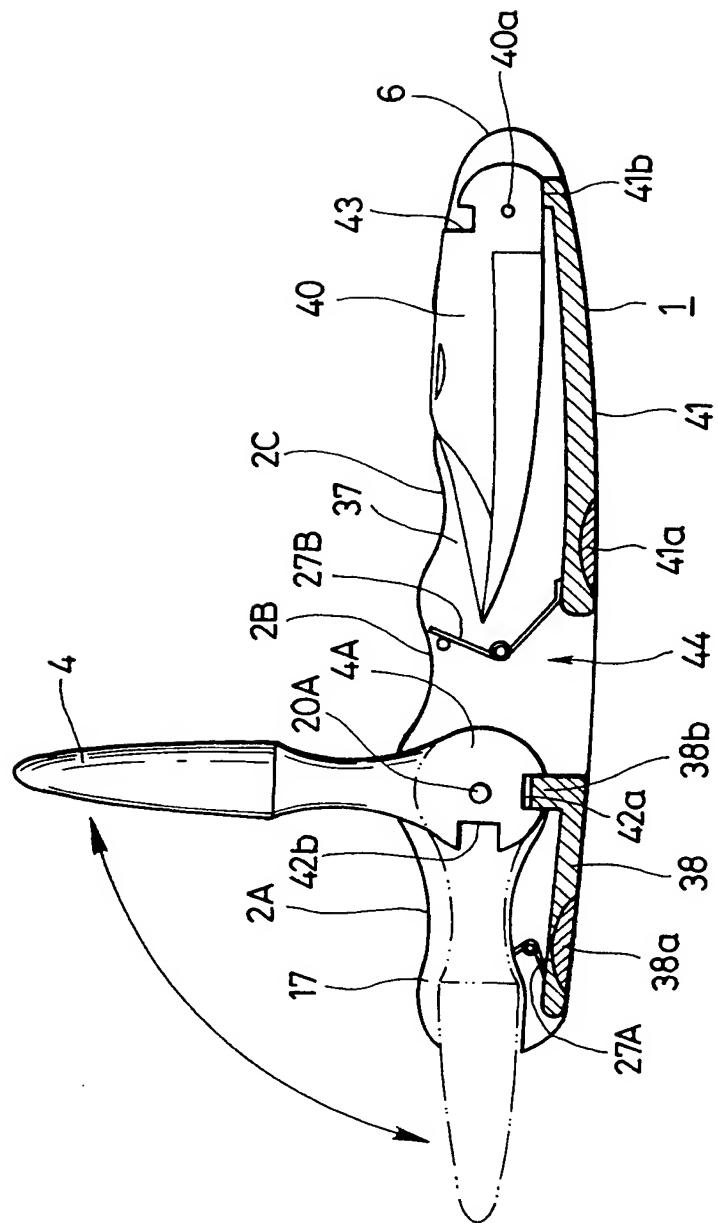
**FIG. 25**



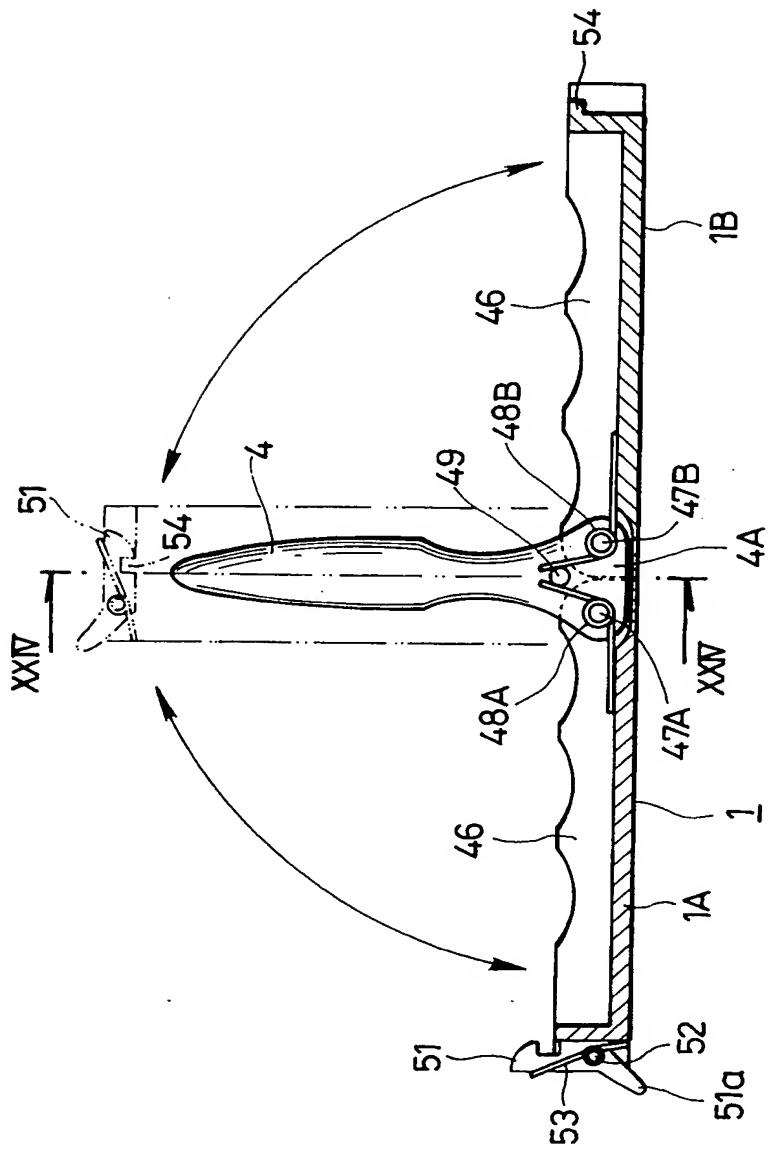
**FIG. 21**



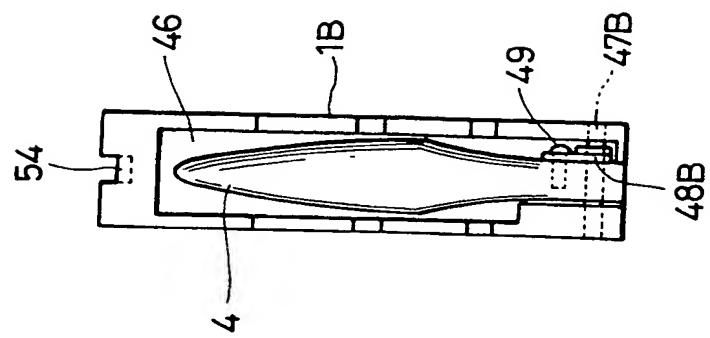
## FIG. 2



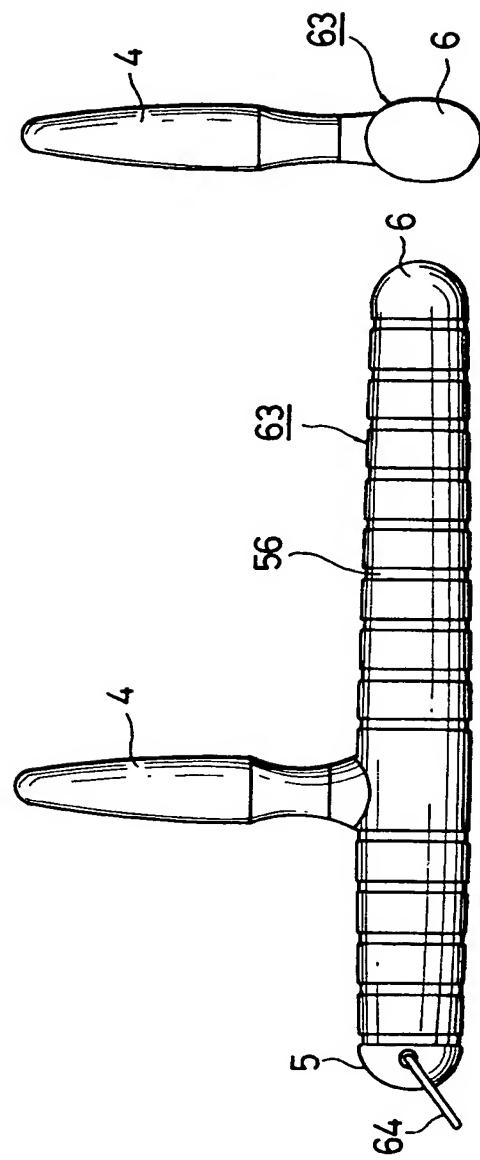
**FIG. 23**



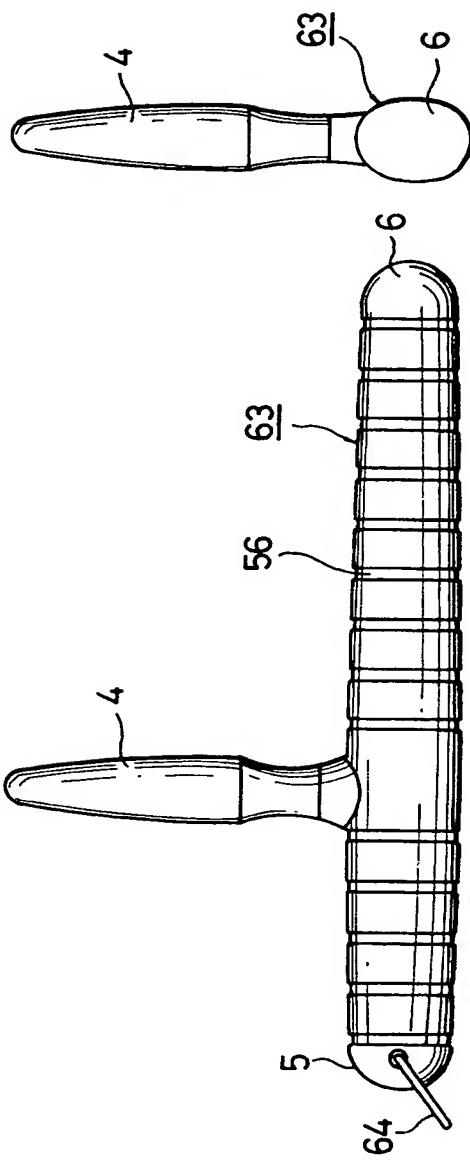
**FIG. 24**



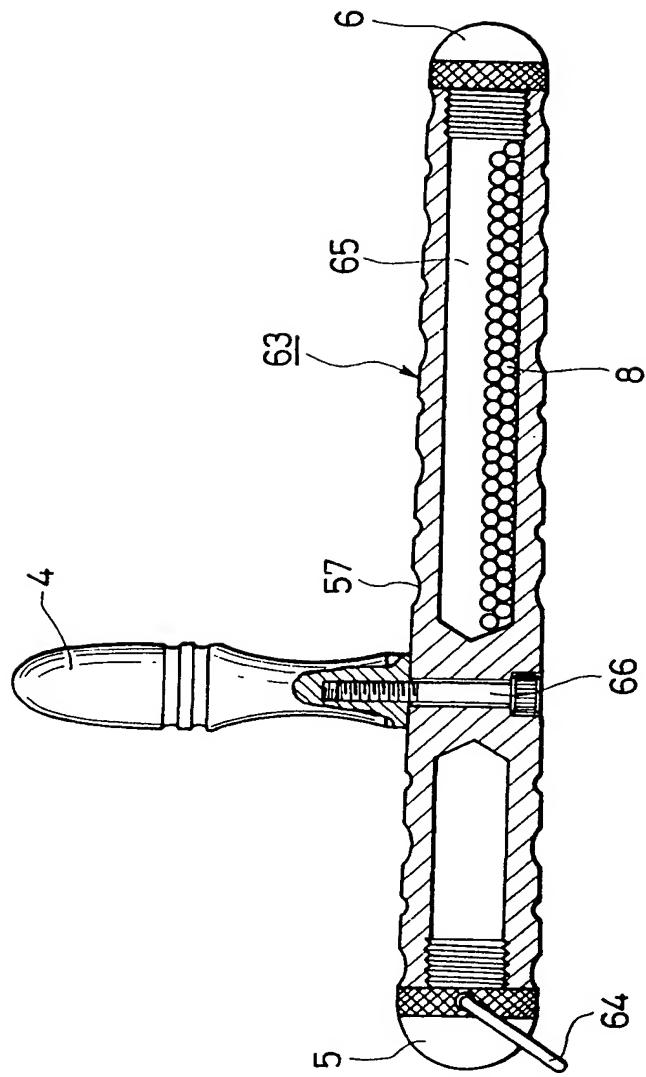
**FIG. 26**



**FIG. 27**



**FIG. 28**



**FIG. 29**

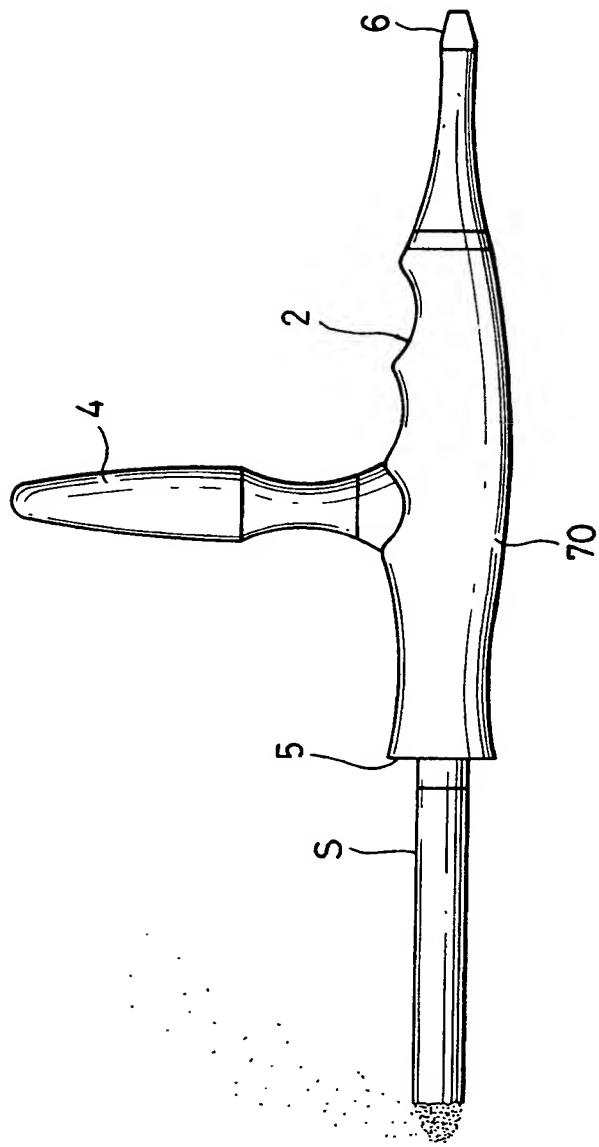
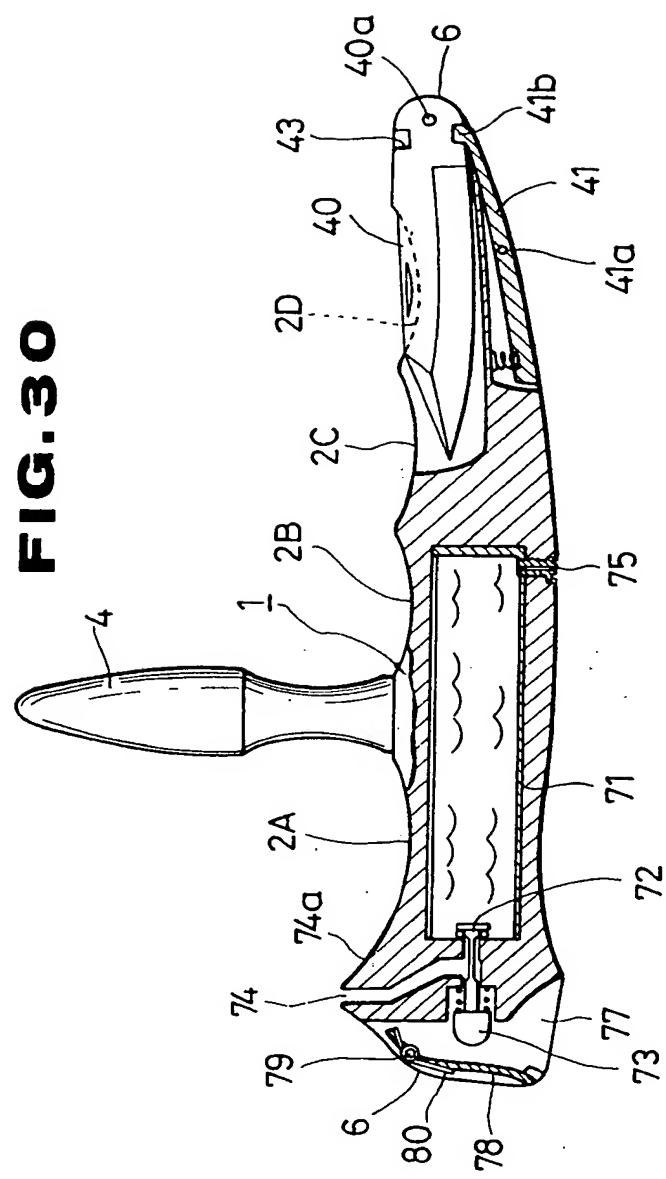
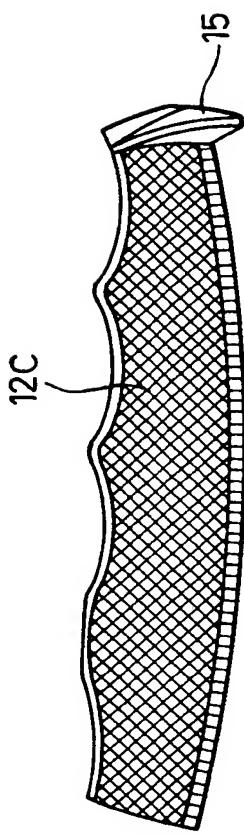


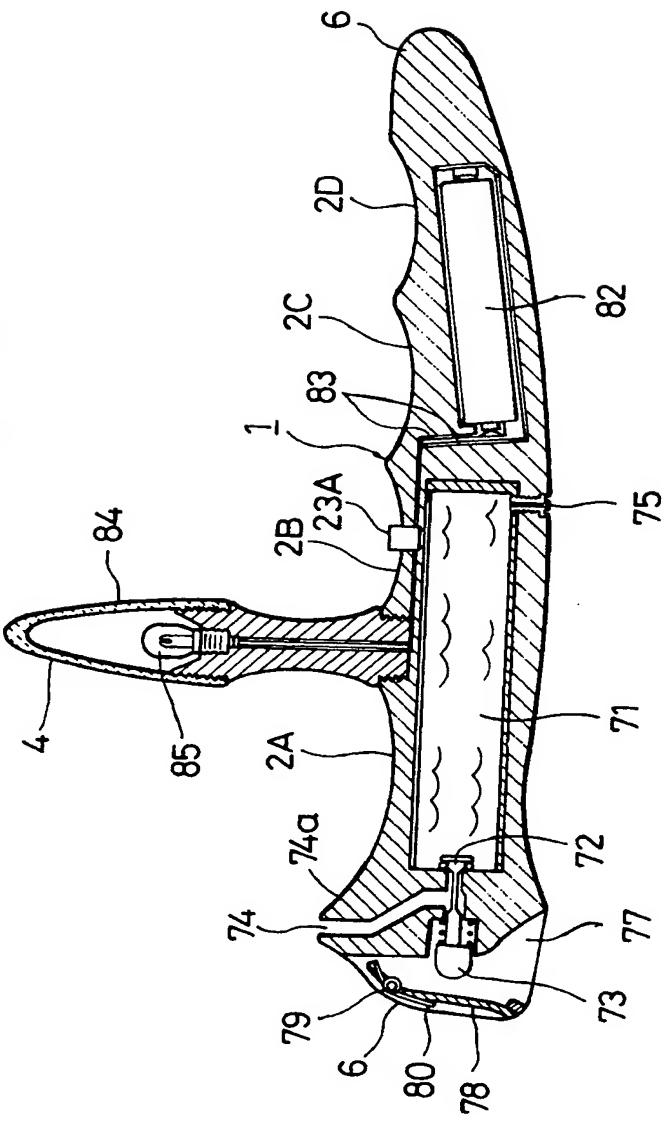
FIG. 30



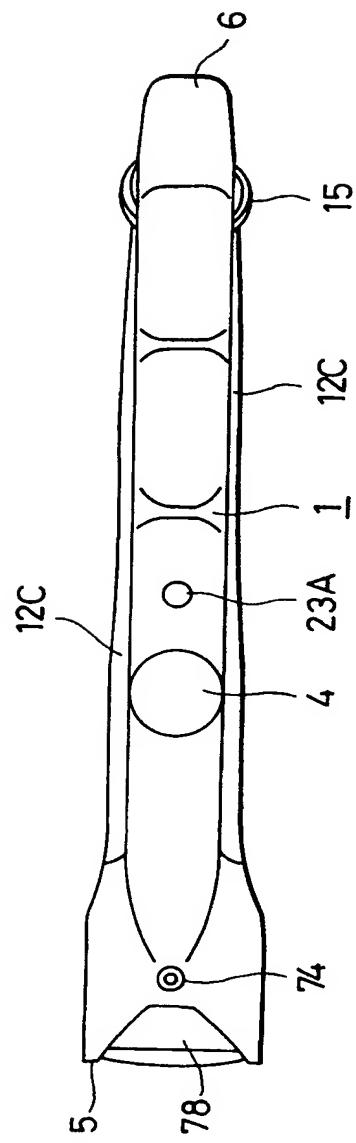
**FIG. 32**



**FIG. 33**



**FIG. 34**







## (12) EUROPEAN PATENT APPLICATION

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(51) Int. Cl. 5. F41B 15/08

(22) Date of filing: 06.11.91

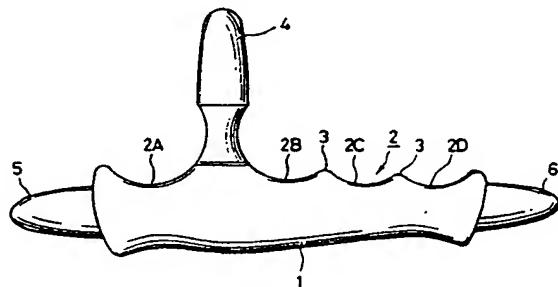
(30) Priority: 08.11.90 JP 303360/90

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Matsuyama-shi Ehime-ken(JP)(43) Date of publication of application:  
13.05.92 Bulletin 92/20(72) Inventor: Ashihara, Hideyuki  
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Matsuyama-shi, Ehime-ken(JP)(84) Designated Contracting States:  
DE ES FR GB(74) Representative: Reichel, Wolfgang, Dipl.-Ing.  
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Reichel und Reichel Parkstrasse 13  
D-60322 Frankfurt (DE)(88) Date of deferred publication of the search report:  
25.08.93 Bulletin 93/34

## (54) Hand-held device for self defence.

(57) A gripping type self-defending tool comprising a grip main body (1) of a shape suitable to gripping by one hand and a protrusion (4) markedly protruding from the grip main body (1), which is used for striking or thrusting an opponent by gripping a portion of the grip main body (1), exposing the protrusion (4) in front of a knuckle from between the forefinger and the middle finger. Both ends of the gripping portion are positioned on the right and left of the knuckle, and used for striking or thrusting the opponent by swinging the knuckle right- and leftward. The protrusion (4) can be folded into or detached from the grip main body (1). It is also possible to incorporate a tear gas reservoir (7) into the grip main body (1) to serve the gripping type self-defending tool also as a weapon capable of injecting a stimulating fluid such as a tear gas, incorporate an electric cell (82) into the gap main body (1) and disposing an electric lamp (73) to the protrusion, thereby serving the gripping type self-defending tool also as a flashlight and, further, attach a ring (64) to one end of the grip main body, thereby serving the gripping type self-defending tool also as a key holder.

FIG. 1





European Patent  
Office

EUROPEAN SEARCH REPORT

Application Number

EP 91 11 8868

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	US-A-4 739 990 (AGUIRRE ET AL.) * the whole document *	1, 14-17	F41B15/08
Y	---	2-6, 13	
Y	WO-A-9 007 959 (WILKINS) * page 3, line 30 - page 5, line 5 * * figures *	2	
Y	---		
Y	US-A-3 603 196 (DOLFI) * column 3, line 9 - line 19 * * figure 6 *	3	
Y	---		
Y	DE-A-340 976 (ZELLER) * page 1, line 14 - line 29 * * figures *	4, 5	
Y	---		
Y	US-A-2 389 882 (WOOD) * column 2, line 34 - line 46 * * figures 1-4 *	6	
Y	---		
Y	GB-A-2 186 354 (NOWELL) * abstract * * figure 1 *	13	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	---		F41B
A	US-A-2 741 025 (STEWART) * column 1, line 63 - column 2, line 22 * * figures *	1	
A	---		
A	US-A-4 475 367 (RAITTO) * abstract * * figures *	14	
A	---		
A	GB-A-J22935 (HAMMESFAHR) & GB-A-22935 A.D. 1909 * the whole document *	11	
	-----		
<p>The present search report has been drawn up for all claims</p>			
Place of search THE HAGUE	Date of completion of the search 17 JUNE 1993	Examiner OLSSON B.G.	
CATEGORY OF CITED DOCUMENTS		<p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... &amp; : member of the same patent family, corresponding document</p>	
<p>EPO FORM 1500 (03-92) POMI</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p>			